MAJORPOWER
MAJORCHARGE® SYSTEM

# CIRCUIT BREAKER PANEL

INSTALLATION & OPERATION MANUAL

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**Revision History**

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## Notes:

Model Number:

Serial Number:

Installation Date:

**This user's manual contains important technical instructions to be followed by qualified personnel responsible for the installation, start-up and maintenance of this equipment. It is recommended that this manual be read attentively to insure safe and reliable operation of this equipment.**

### Warranty

This product is warranted against defect in materials and workmanship for a period of one year from date of shipment. During warranty period, Majorpower Corporation will, at its option, either repair or replace products that prove to be defective.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from unauthorized modification, misuse, improper installation, or operations beyond those described in this manual. No other warranty is expressed or implied.

Every care has been taken in compiling the information in this publication; Majorpower cannot accept legal liability for any inaccuracies contained herein. Majorpower Corporation reserves the right to alter specifications without notice and whenever necessary to ensure optimum performance from its product range.

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# Table of Contents

WARRANTY ..... 3

**1. INTRODUCTION ..... 5**

**2. IMPORTANT SAFETY INSTRUCTIONS ..... 6**

SAFETY STATEMENT ..... 6

**3. OVERVIEW ..... 7**

SYSTEM CONFIGURATIONS ..... 7

**4. INSTALLATION ..... 8**

WARNING ..... 8
TOOLS REQUIRED ..... 8
PRELIMINARY INSPECTION ..... 8
PANEL MOUNTING ..... 8
CONNECTIONS – CHASSIS GROUND ..... 8
CONNECTIONS - INPUT ..... 8
CONNECTIONS - OUTPUT ..... 9
CONNECTIONS - ALARMS ..... 9

**5. SYSTEM OPERATION ..... 9**

FINAL INSPECTION ..... 9

# 1. INTRODUCTION

Thank you for choosing MAJORPOWER as the power conversion products supplier to your company. Our power conversion products are designed and built for full reliability at multiple locations and variety of applications. These intelligent, dependable power systems provide economical power support for all your network needs.

This manual contains information and technical details for DC distribution models in the MAJORCHARGE power system family. The general operation procedures are common, however in some instances, all or part of the information will not apply to the specific model purchased.

**This user's manual contains important technical instructions to be followed by qualified personnel responsible for the installation, start-up and maintenance of this equipment. We recommend that this manual be read attentively to insure safe and reliable operation of this equipment.**

Should you require any assistance, please call our Application Engineering department at:

**Tel: 888-708-6610 or (919) 563-6610**

**Fax: 888-708-6620 or (919) 563-6620**

**Email: tech-support@majorpower.com**

# 2. IMPORTANT SAFETY INSTRUCTIONS

Safety Statement

SAVE THESE INSTRUCTIONS - This manual contains important equipment instructions that should be followed during installation and maintenance of the power equipment.

To reduce the risk of electric shock, install the equipment in a temperature and humidity controlled indoor environment, free of conductive contaminants. Ambient temperature should not exceed 50°C (122°F).

- The following precautions should be respected when working on power equipment:
- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and boots.

Additional Safety Notes

- Upon receipt, examine the shipment box for damage. Notify the carrier immediately, before opening if damage is evident.
- Do not open or disassemble the equipment, warranty will be voided.
- Do not operate near water or in excessive humidity.
- Keep liquid and foreign objects from entering the equipment.
- Install the equipment in a well-ventilated area.
- Do not operate the equipment close to combustible gas or open fire.
- Reduced air flow: Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical loading: Mounting of the equipment in a rack should be level and balanced.
- Wiring: Adequate input power must be supplied to the equipment for proper use; correct wiring sizes must be respected.
- Grounding: Reliable grounding of rack-mounted equipment should be maintained.

# 3. OVERVIEW

## System Configurations

The power distribution panel is rated for 100 amps per bus. Each bus can be equipped with circuit breakers rated from 1 amp to 30 amp rating per position. Multiple configurations have been created for a variety of applications. The plug-in circuit breakers can be easily installed / removed / arranged in the field because of the removable faceplate design and integrated backplane.

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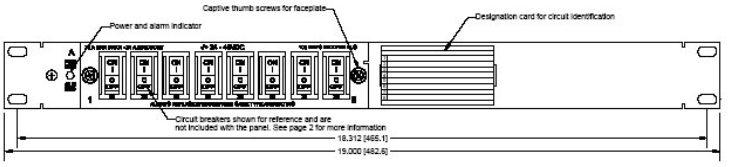
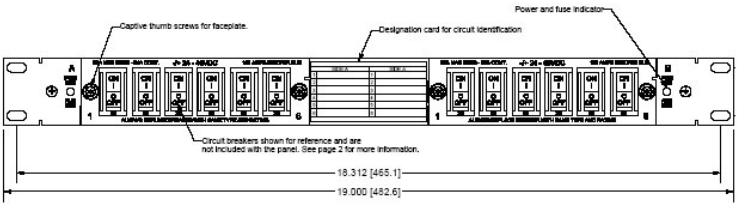

Captive thumb screws for faceplate
Power and alarm indicator
Designation card for circuit identification
Circuit breakers shown for reference and are not included with the panel. See page 2 for more information
18.312 [465.1]
19.000 [482.6]

MCB 6/6-1U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Captive thumb screws for faceplate.
Designation card for circuit identification
Circuit breakers shown for reference and are not included with the panel. See page 2 for more information.
18.312 [465.1]
19.000 [482.6]

# 4. INSTALLATION

## Warning

All connections should be performed by qualified service personnel and be in compliance with the latest release of the National Electrical Code or prevailing authority codes for the installation. This panel should be installed in a restricted area.

## Tools Required

The following tools are recommended for installation:
Phillips no.2 screwdriver
Insulated slotted screwdriver – blade size 1/8"
Insulated side cutters
Multimeter
Wire and cable ties
Compression terminal and crimper

## Preliminary Inspection

Prior to installation the equipment, take a few moments to familiarize yourself with the parts of the panel. Ensure that the equipment has not sustained damage during shipping.

## Panel Mounting

Mount the panel is a standard 19 inch rack using the provided #12-24 x ½" screws. Four screws are provided with each panel. Ensure the panel is not mounted in a method that creates a potentially hazardous condition for users or equipment.

## Connections – Chassis Ground

The panel chassis is designed for connection to the grounding network of the site installation. Connect suitable wire and crimp terminal to the panel using the supplied studs and locking nuts. Torque fasteners to 24 in-lbs. Bond the other end of the wire to the location installation per local ground network requirements.

Recommended Lug: Panduit LCD6-14AF
6AWG; ¼" stud; 5/8" hole space; width .625"

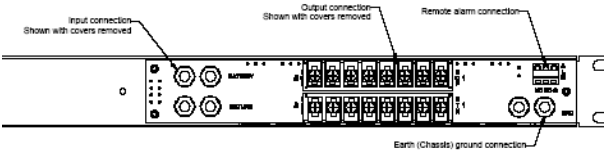
## Connections - Input

The panel is designed to a maximum amperage rating of 100 A per bus when properly installed using 2 AWG wire and an upstream (supply) overcurrent device of not more than 125 amps. All wiring used with this product should be rated for 90°C or greater. If alternate installation designs are used, the wire and overcurrent device must be selected based on the prevailing authority codes for the installation. Input connections require the 90 degree compression lug for proper installation.

Recommended Lug: Panduit LCD2-14AF-Q
2AWG; ¼" stud; 5/8" hole space; width .625"; 90 degree terminal

1. Attach the lug to the wire and crimp according to manufacturer's instructions. Use appropriate shrink insulation over the un-insulated terminal barrels.
2. Remove the safety covers from the panel by pulling straight out from the back of the panel.

3. Using the supplied lock nuts, position the lug on the terminal studs and tighten to 24 in-lbs.
4. Confirm that the appropriate battery and return wires are attached to the proper connections for the system installation.




*Power Verification*

5. Test the polarity of the panel prior to connection of loads. Turn on the supply overcurrent device for the bus being installed.
6. Verify the polarity and voltage is correct at the input terminal using a multimeter.
7. Check the front panel status light. PWR - Green or Red. Any installed circuit breaker in the off position will create a red LED.
8. Verify the Form-C alarm terminal connectivity based on the alarm or non-alarm conditions. Use the multimeter to check continuity of the alarm terminal pins while cycling the circuit breakers that are installed in the panel.
9. After testing, power OFF the supply overcurrent device.
10. Install the input terminal safety covers and secure the appropriate strain reliefs for the wires.

Repeat these steps for each bus being installed.

### Connections - Output

The panel is designed to support specific circuit breakers. Use only approved circuit breakers supplied with this panel. Use the output terminals to supply load connections by attaching #10-22 AWG wire/terminals for each piece of equipment.

1. Attach the equipment battery and return wires to the corresponding circuit breaker position. Torque screw to 9 in-lbs.
2. Label the panel circuit card for each position installed and used.
3. Install the correct circuit breaker into the corresponding circuit position.

Repeat these steps for each load circuit.

### Connections - Alarms

The alarm terminal accepts #12-26 AWG wire. Strip the end of the wire and insert into the positions used for the local alarm network.

## 5. SYSTEM OPERATION

### Final Inspection

Check all connection and installation for accuracy. Secure all wires and clear any installation debris from area.

Energize the supply overcurrent device then energize each load equipment circuit breaker as required.